

Citizens have raised questions about the quality of data used in investigations and how the state and EPA ensure quality. The agencies identify data quality objectives, which specify the quality of data required to support decisions in the cleanup program. The development of data quality objectives follows guidance in the Comprehensive Environmental Response, Compensation and Liability Act, the National Contingency Plan, and EPA documents. Existing data are used whenever data quality objectives are met or can be validated.

III. The Process of Cleaning Up

The Federal Facility Agreement and Consent Order

In 1989, the INEEL was placed on the National Priorities List (Superfund) due to confirmed releases of contaminants to groundwater at the Radioactive Waste Management Complex, the Test Reactor Area and Test Area North. DOE, which manages the federal INEEL facility, was required to enter into negotiations for a federal facility agreement with the state of Idaho and EPA Region 10 as a result of this listing. The Federal Facility Agreement and Consent Order was signed by the agencies in 1991.

Agency roles

The responsibility for implementing the FFA/CO lies with project managers who represent the DOE, the EPA, and the state of Idaho. Under the FFA/CO, the state of Idaho and EPA play a role as partners to, and regulators of, DOE. The project managers or support staff meet or confer weekly on status during all phases of the remediation process. This coordinated effort leads to the development of work plans, investigation summaries, proposed remediation plans and other documents.

The FFA/CO empowers the state of Idaho Department of Environmental Quality and EPA Region 10 to ensure DOE and its contractors comply with federal and state environmental regulations for cleanup. EPA's power to ensure that DOE complies with federal and state regulations stems from environmental statutes and regulations under CERCLA and RCRA. The FFA/CO establishes one process to facilitate compliance. In general, the agreement is designed to:

- Establish procedures and a schedule for prioritizing, implementing, and monitoring remediation in accordance with applicable federal and state laws
- Expedite remediation as much as possible to protect human health and the environment
- Facilitate cooperation, information exchange, and participation between the agencies
- Minimize duplication of analyses and documentation

The FFA/CO is amended only in writing by the unanimous agreement of the three project managers (from DOE, EPA, and the state of Idaho). There are procedures in the FFA/CO to resolve disputes that arise between the agencies. As stated in the agreement, it is the agencies' intent to resolve issues with the first-level manager, and dispute resolution will be invoked only for significant issues.

How does DOE find contaminated sites?

For workers or the public to be at risk now or in the future from contaminated areas at the INEEL, they must be exposed to contaminants at concentration levels that cause harm. Exposure could occur through ingestion, inhalation or absorption.

Under CERCLA, DOE conducts a series of investigations to determine the types and the amount of contamination. Potential release sites are investigated to determine if contamination exists. Record searches and personal interviews are conducted to obtain a list of possible contaminants.

After contaminants are identified, DOE conducts a risk assessment that evaluates potential risks to human health and the environment. In the remedial action, DOE examines ways people could come into contact with the contamination. DOE makes assumptions based on a scenario of a future resident living at the waste site, who drink the groundwater and uses contaminated soils and water to grow the food he or she consumes. The assumptions, based on EPA guidelines, allow DOE to determine the contaminants' risk to human health. If results show there is an unacceptable risk to human health based on exposure factors, DOE determines a course of action to reduce that risk. If risks are acceptable, no remedial action is taken.

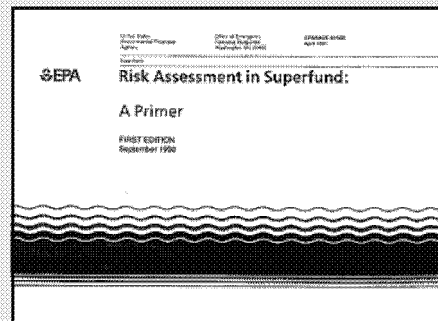
While DOE has responsibility for the investigation of the site and determination of the actions necessary to protect human health and the environment, the Idaho Department of Environmental Quality must concur with the results of the investigation and the selected action, and EPA must approve the investigation and action. The public also has a significant role in the selection of the cleanup action.

There has been a great deal of interest in recent months about "risk-based end states," a term that describes what a given cleanup site will look like upon completion of cleanup work. A residential scenario has been used to evaluate risk at INEEL sites, even though the current end state for site planning is continued government ownership and use of the entire site for at least another 100 years.

Institutional controls established by CERCLA records of decision are currently in place to protect workers from coming into contact with contaminants at waste sites. Cleanup remedies and institutional controls are subject to five-year reviews by the agencies to ensure they remain protective of human health and the environment. Specific site areas, such as the Idaho Nuclear Technology and Engineering Center and the Radioactive Waste Management Complex, will require government management and control in perpetuity. Protection of human health and the quality of the Snake River Plain Aquifer are primary concerns of the public and DOE.

To prioritize remedial investigations at the INEEL, the agencies considered:

- 1) Which sites posed an immediate threat to human health or the environment
- 2) Which sites already had a sufficient base of information to make a decision
- 3) Whether a technology existed that could be used for given site conditions



Understanding Risks

Understanding risks ranks high among public concerns. Citizens have asked the agencies for more information about risk assessments. In response, the EPA published a guide for understanding risk, *Risk Assessment in Superfund: A Primer*. It is located in Binder 300 of the Information Repository (see Appendix C, page 25, for repository locations), or it can be obtained by calling the EPA at (206) 553-6901.

Status of Interim Actions

All interim actions identified in the action plan of the FFA/CO have been started. Some have already been completed; others are in the remedial design phase or the remedial action phase. These include actions at the following operable units:

- Test Reactor Area Warm Waste Pond (completed)
- Power Burst Facility Chemical Evaporation Pond (completed)
- Unexploded ordnance locations (in progress)
- Pit 9 at the Radioactive Waste Management Complex (Stage II is scheduled to be complete by March 31, 2004; Stage III is still in the design phase)
- Tank Farm soils at the Idaho Nuclear Technology and Engineering Center (in early stages of implementation)

Interim actions were identified for these operable units because enough information existed to conclude that the extent of contamination posed a potential near-term threat to human health or the environment, or because implementation would expedite final cleanup of the site.

Defining 'cleanup' and 'remediation'

While most investigations are completed or well under way, it is helpful to understand the full cleanup process, starting with the investigation phase. Cleanup laws and regulations often use words such as remediation, investigation and feasibility study. This Community Relations Plan will most often use the word "cleanup" to mean the broad responsibility to manage legacy waste and contamination and the word "remediation" to mean the specific CERCLA actions, including:

- Identifying the nature and extent of contamination and associated risks
- Identifying and analyzing possible remediation alternatives
- Involving the public in choosing a remedy from the alternatives
- Performing engineering design work
- Taking actions in the field

Cleanup may be done under CERCLA or RCRA. All cleanup actions ensure that enough of the contaminant has been removed so that the remaining contamination will not present an unacceptable risk to people or the environment. Cleanup doesn't mean all traces of a contaminant at a site are removed; doing so is not possible. Facility closure decontamination and decommissioning work may be considered remedial actions under CERCLA or may be completed under RCRA.

Cleanup also means taking action at a waste site to protect human health and the environment. The range of actions can vary greatly from no action to intensive site construction and removal activity depending on the risk posed by exposure to contaminants.

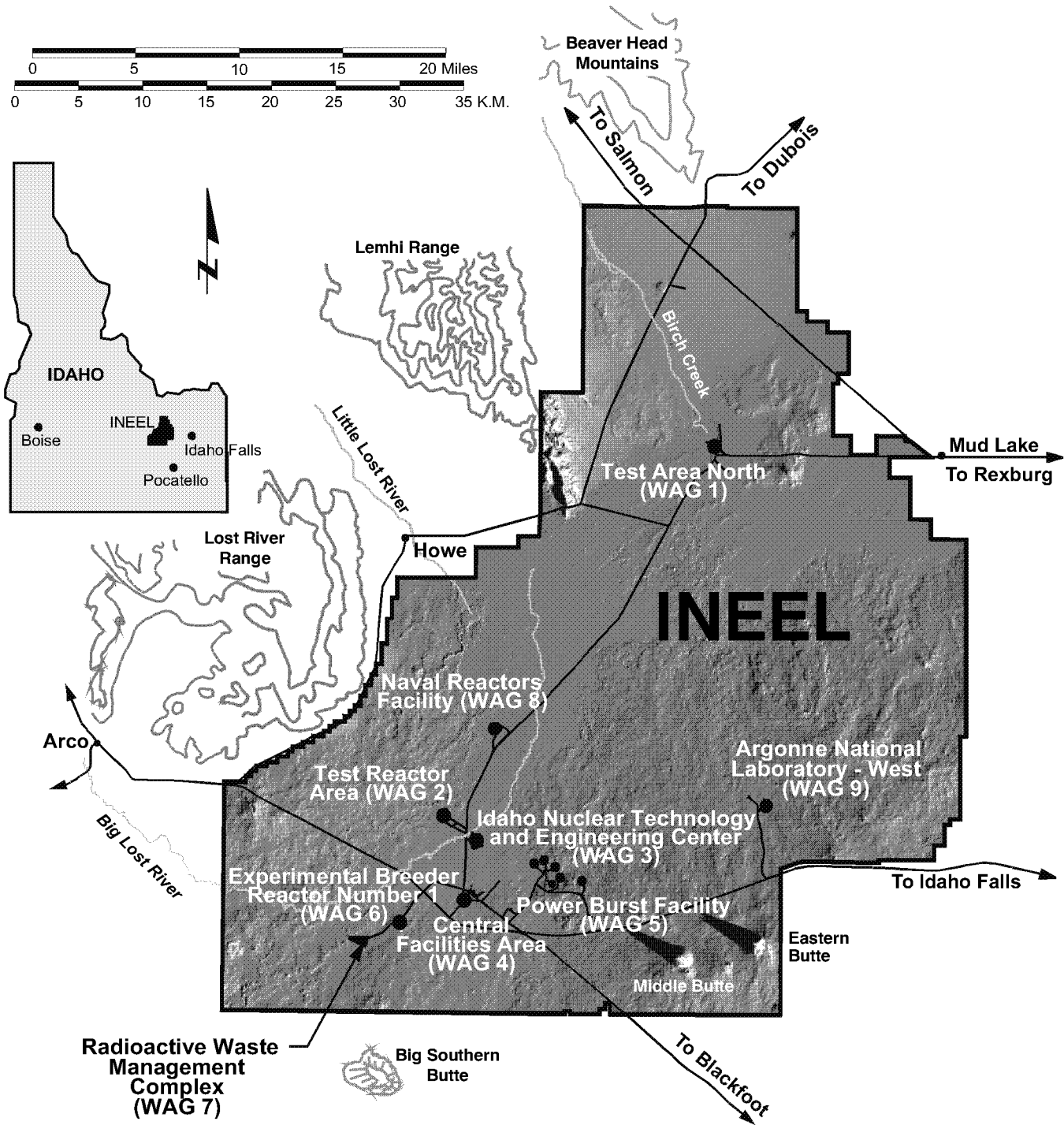
Where appropriate during phases of the process, it is the policy of DOE to incorporate values of the National Environmental Policy Act. The CERCLA process is legally equivalent to the National Environmental Policy Act process.

The FFA/CO Action Plan

The FFA/CO outlines the Superfund remedial response process for the INEEL and includes an action plan. The action plan contains the procedures and schedule by which the agencies agree to investigate potential release sites.

A fundamental goal of cooperative efforts by the agencies in implementing the action plan is to emphasize remedial action. This goal recognizes that no reasonable amount of investigation can resolve all uncertainty and that remedial actions must accommodate changes from what was originally expected.

INEEL Facilities and Waste Area Groups



A waste area group, or WAG, is one of 10 administrative management areas established under the FFA/CO. An operable unit is a grouping of potential or confirmed release sites with similar contamination problems within a waste area group.

INEEL Waste Area Groups (WAGs)

WAG 1 – Test Area North

WAG 2 – Test Reactor Area

WAG 3 – Idaho Nuclear Technology and Engineering Center

WAG 4 – Central Facilities Area

WAG 5 – Power Burst Facility, Auxiliary Reactor Area

WAG 6 – Boiling Water Reactor Experiment sites, Experimental Breeder Reactor I

WAG 7 – Radioactive Waste Management Complex

WAG 8 – Naval Reactors Facility

WAG 9 – Argonne National Laboratory-West

WAG 10 – Snake River Plain Aquifer and Miscellaneous Sites

When major changes to a remediation remedy are needed, an amendment to the record of decision is required. The public is offered an opportunity to review and comment on the proposed plan that leads to the amendment. A proposed plan is written and public meetings are held to present the range of alternatives to the public. After a comment period, public input is considered by the agencies as they make their final decision on the remediation alternative.

When the agencies agree that only minor changes to a remedy are needed, the public is notified through publication of an Explanation of Significant Differences document. Such an approach encourages timely selection of a remedy, flexibility for remedial action, and the ability to respond to information discovered during investigations.

Waste area groups and operable units

The FFA/CO divided the INEEL into 10 waste area groups, each containing a number of areas potentially contaminated with hazardous waste. Waste Area Groups 1 through 9 correspond to facility areas at the INEEL. Waste Area Group 10 corresponds to site-wide concerns and includes the Snake River Plain Aquifer. Contaminated areas found after a record of decision is signed are included in Waste Area Group 10.

Waste area groups are further broken down into operable units to provide greater management efficiency as defined in the National Contingency Plan. All potential release sites identified in the agreement are accounted for in an operable unit.

During negotiations of the FFA/CO, the agencies categorized some sites as “No Further Action” sites. A “No Further Action” designation was made if it was determined that no hazardous substances were released, or if an approved summary assessment (under the Consent Order and Compliance Agreement) existed and there was no evidence of radiological contamination.

The Superfund process

The technical process of Superfund or CERCLA remedial actions can be broken into the following five phases: investigation, decision, design, action, and operation and maintenance.

1. Investigation

During the investigation phase, the agencies work together to identify remedial action objectives, define the nature and extent of contamination, and develop a baseline risk assessment. These remedial investigation reports are technical studies that undergo rigorous review by the agencies to ensure technical completeness and adequacy for decision-making purposes. The information

generated during the remedial investigation is used to evaluate the risk posed by the site and select a remedial action, if required, from a range of alternatives presented in a feasibility study.

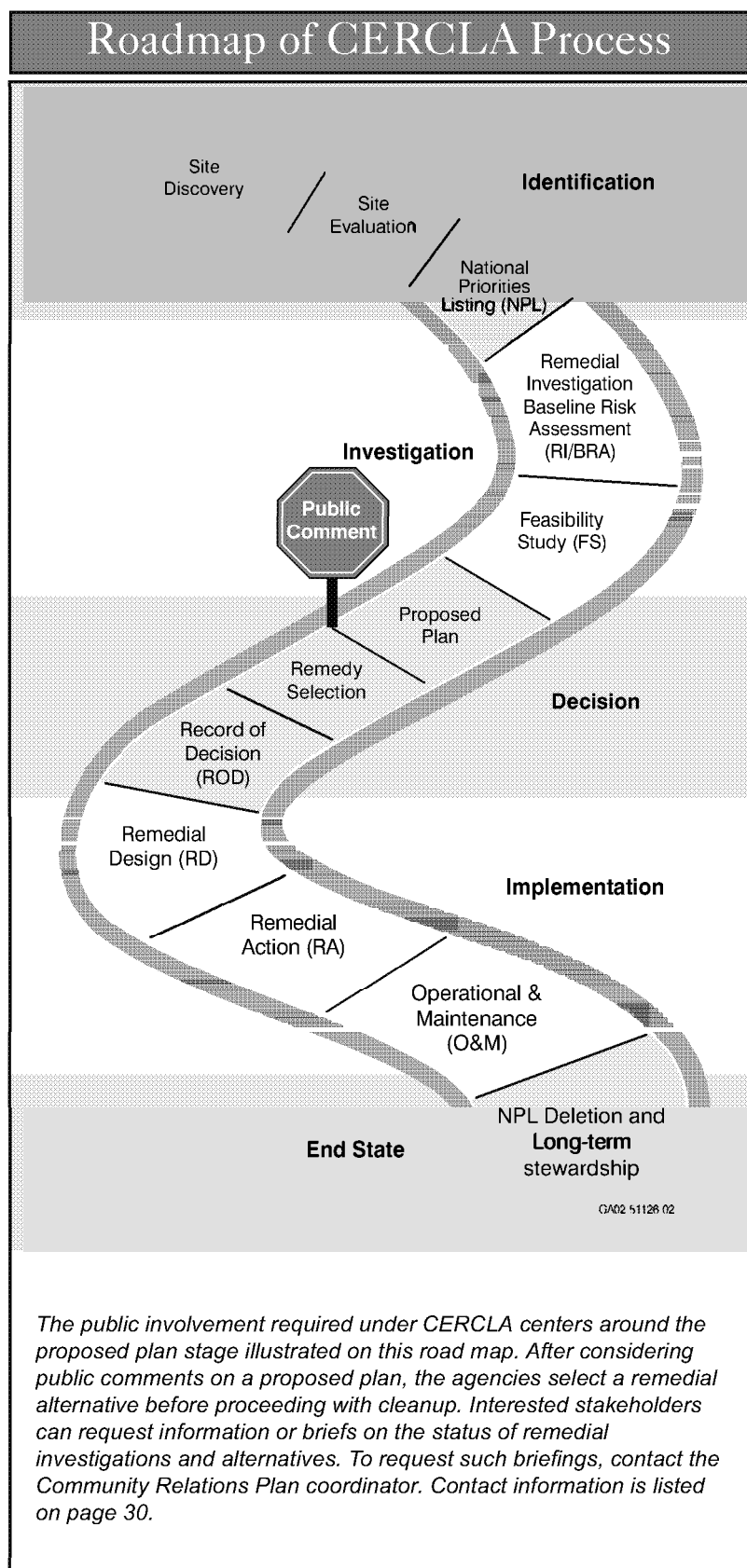
The remedial investigation includes sampling and monitoring in the field to gather enough information to define the extent of contamination and the risk to human health and the environment. Based on the results of the investigation, the need for remediation can be determined. A feasibility study, based on information from the remedial investigation, identifies and evaluates the cleanup alternatives and provides sufficient information for the remedy to be selected. A feasibility study results in an analyzed list of cleanup alternatives for a particular operable unit. The remedial investigation and feasibility study often overlap.

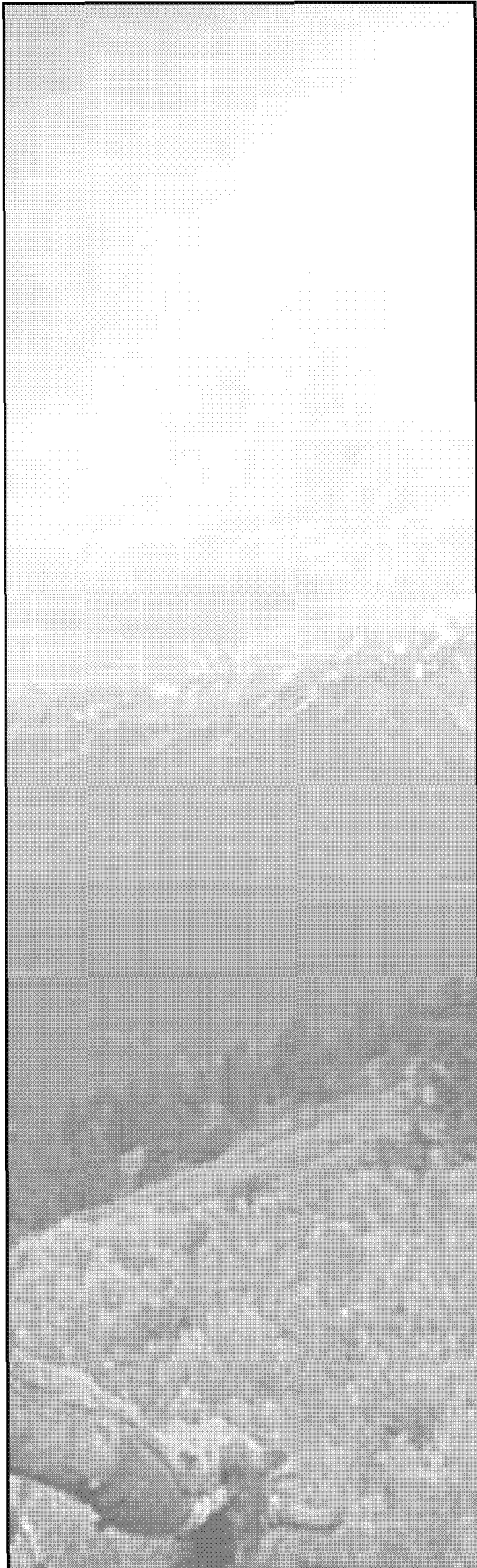
An interim action is initiated to address an immediate threat or when the problem is well defined and does not need a detailed remedial investigation/feasibility study. A brief investigation is conducted to determine an appropriate cleanup technology to mitigate risk posed by a site. The interim action is then incorporated into the final remedial action for the area.

2. Decision

When the remedial investigation/feasibility study or interim action investigation is completed, DOE prepares a proposed plan that includes the results of the remedial investigation, risk assessment, and analysis of alternatives considered. The state and EPA review the proposed plan during development. After the agencies agree to the content of the proposed plan, including the cleanup alternatives and the preferred alternative, the proposed plan is distributed to the public.

After the proposed plan for a cleanup project is distributed to the public, at least





one public meeting is held to allow members of the public to meet with agency representatives to directly provide their input on the remediation alternatives. The public meeting is held during a 30-day public comment period following the release of a proposed plan. The agencies review and consider the public's comments, then DOE drafts the record of decision. EPA and the state review and comment on the record of decision, and when all three agencies are in agreement, all three sign it. The agencies' responses to public comments are incorporated in the responsiveness summary of the record of decision. The final record of decision is then placed in the Administrative Record and made available to the public.

The public comment sessions built into the CERCLA process constitute the primary means for stakeholders to provide input on the cleanup remedy chosen for CERCLA cleanup sites.

3. Design

During the remedial design phase, the agencies collectively determine the scope of the design, applicable guidelines for worker safety, and details concerning the cleanup levels that were established in the record of decision. The agencies also determine the engineering design (including schedule, cost estimates, and disposal options for wastes generated) and ensure that all activities comply with applicable standards in state and federal laws.

4. Action

Remedial action is the actual construction or implementation phase that follows the remedial design of the selected cleanup alternative at a site. Remedial actions are the series of steps taken to reduce, control, or monitor the actual or potential release of contamination. The action and cleanup goals are identified in the record of decision. The agencies evaluate and monitor work to determine the effectiveness of the action and whether the cleanup requirements are being met.

5. Operation and maintenance

Following the completion of remedial action activities, the EPA and state review the remedy every five years or sites where the remedial action leaves hazardous substances, pollutants, or contaminants on-site. These activities take place during operation and maintenance. Five-year reviews continue until no hazardous substances, pollutants, or contaminants remain at a site above levels that would allow for unlimited use and unrestricted exposure.

Removal Actions

Superfund Section 104 provides broad authority for a federal program to respond to releases of hazardous substances, pollutants or contaminants. The two major types of response actions are remedial actions that are a result of the technical process described in the previous section and removal actions. Removal actions are taken to provide a permanent remedy to mitigate a long-term threat, a removal action responds to more immediate threats, is limited in scope and cost, and may be temporary.

INEEL is using Non-Time Critical Removal Action authority to accelerate the decontamination and dismantling of no-longer-used facilities and to accelerate other appropriate activities to reduce risk. To ensure that citizens have access to information when Non-Time Critical Removal Actions are taken, DOE will publish Emergency Evaluations and Cost Analysis documents and, when appropriate, hold public meetings.

The five-year review process

The community is notified of the five-year review of a site prior to, or immediately following, the review process. The notification (fact sheet or public notice) states whether the review is a statutory or policy review and where copies of the report can be obtained. According to the National Contingency Plan, the report must be located in the site information repository.

In CERCLA regulations, if a site is cleaned up prior to the first five-year review and it is determined that a five-year review is not necessary, this finding will be made available for public comment in a decision document such as a subsequent record of decision, record of decision amendment or Notice of Intent to Delete. This has not happened at the INEEL.



At the Radioactive Waste Management Complex workers install part of a system that is being used to remove underground organic contaminants.